

Title (en)  
ADDITIVE MANUFACTURING METHODS AND SYSTEMS WITH FIBER REINFORCEMENT

Title (de)  
ADDITIVHERSTELLUNGSVERFAHREN UND SYSTEME MIT FASERVERSTÄRKUNG

Title (fr)  
PROCÉDÉS ET SYSTÈMES DE FABRICATION ADDITIVE AVEC RENFORCEMENT PAR FIBRES

Publication  
**EP 2962789 A3 20160420 (EN)**

Application  
**EP 15174469 A 20150630**

Priority  
US 201414318909 A 20140630

Abstract (en)  
[origin: EP2962789A2] Additive manufacturing methods for fabricating a fiber-reinforced composite objects include providing at least a first layer of powder material 210, disposing a fiber material adjacent the at least first layer of powder material to form a fiber reinforcement layer 220, and applying a laser energy 230 to the at least first layer of powder material so as to fuse the powder material into at least a first laser fused material layer adjacent the fiber reinforcement layer of the fiber-reinforced composite object.

IPC 8 full level  
**B22F 3/105** (2006.01); **B28B 1/00** (2006.01); **B29C 67/00** (2006.01); **C22C 47/14** (2006.01); **C22C 49/02** (2006.01)

CPC (source: EP US)  
**B22F 10/28** (2021.01 - EP US); **B23K 26/00** (2013.01 - US); **B23K 26/342** (2015.10 - US); **B29C 64/153** (2017.07 - EP US); **C22C 47/14** (2013.01 - EP US); **C22C 49/02** (2013.01 - EP US); **B28B 1/001** (2013.01 - EP US); **B33Y 10/00** (2014.12 - EP US); **B33Y 80/00** (2014.12 - EP US); **Y02P 10/25** (2015.11 - EP US)

Citation (search report)

- [E] EP 2918394 A1 20150916 - BAE SYSTEMS PLC [GB]
- [XY] GB 2493398 A 20130206 - UNIV LOUGHBOROUGH [GB]
- [X] US 2007238056 A1 20071011 - BAUMANN FRANZ-ERICH [DE], et al
- [X] US 6064031 A 20000516 - TALWAR RAJESH [US]
- [Y] WO 2014071135 A1 20140508 - GEN ELECTRIC [US]
- [A] US 6144008 A 20001107 - RABINOVICH JOSHUA E [US]
- [A] WO 2013136096 A1 20130919 - UNIV EXETER [GB]
- [A] US 6682688 B1 20040127 - HIGASHI YOSHIKAZU [JP], et al

Cited by  
EP3354632A1; DE102017113586A1; CN112453421A; CN108602126A; DE102017212731A1; EP3187286A1; US11155502B2; WO2018137894A1; WO2017137262A1; US10583532B2; US10773340B2

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 2962789 A2 20160106; EP 2962789 A3 20160420; EP 2962789 B1 20200805**; CN 105312568 A 20160210; JP 2016014188 A 20160128; JP 6717573 B2 20200701; US 2015375340 A1 20151231; US 9757802 B2 20170912

DOCDB simple family (application)  
**EP 15174469 A 20150630**; CN 201510401191 A 20150630; JP 2015130626 A 20150630; US 201414318909 A 20140630